FIG. 1

VERTICAL SCAN SHIFT REGISTER /REST CONTROLLER — 12

CL   10. PIXEL ARRAY   PX03

VR
SLCT
RST

M1
PD   M2
M3

PX00

VR

VR

VR

PX33

COLUMN OUTPUT   ~14

CS0   CS1   CS2   CS3   AMP

OUTPUT

HORIZONTAL SCAN SHIFT REGISTER   ~16

0Bus

FIG. 2

FIG. 3

FIG. 4

FIG. 5

PIXEL ARRAY ~10

OBUS

AMP

ADC

20. COLOR PROCESSOR

Pin

24 SENSITIVITY CORRECTION CIR.

26 SENSITIVE CORRECTION TABLE

P

28 COLOR INTERPOLATION PROCESSING CIR.

30 INTERPOLATION MEMORY

32 COLOR ADJUSTMENT CIR.

34 GAMMA CONVERTER

36 GAMMMA TABLE

38 FORMAT CONVERTER
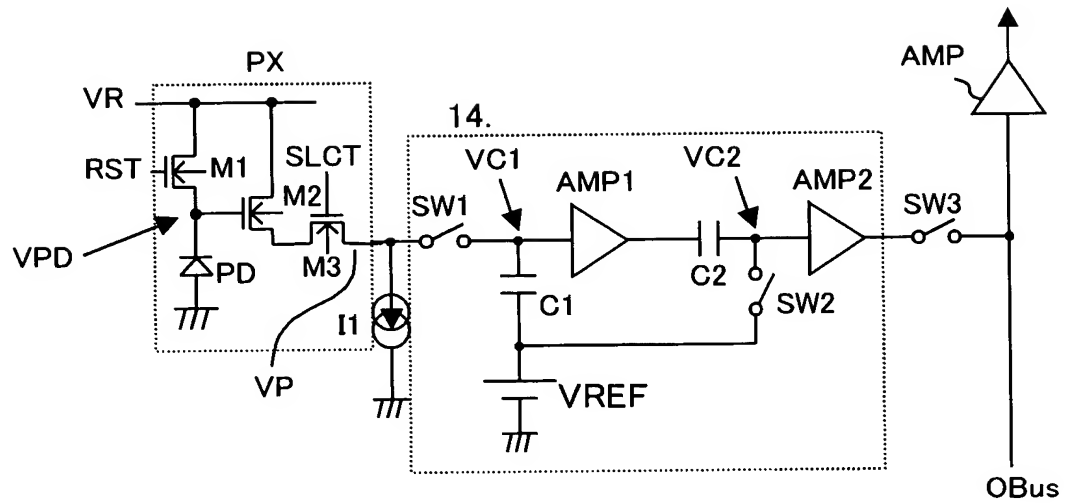
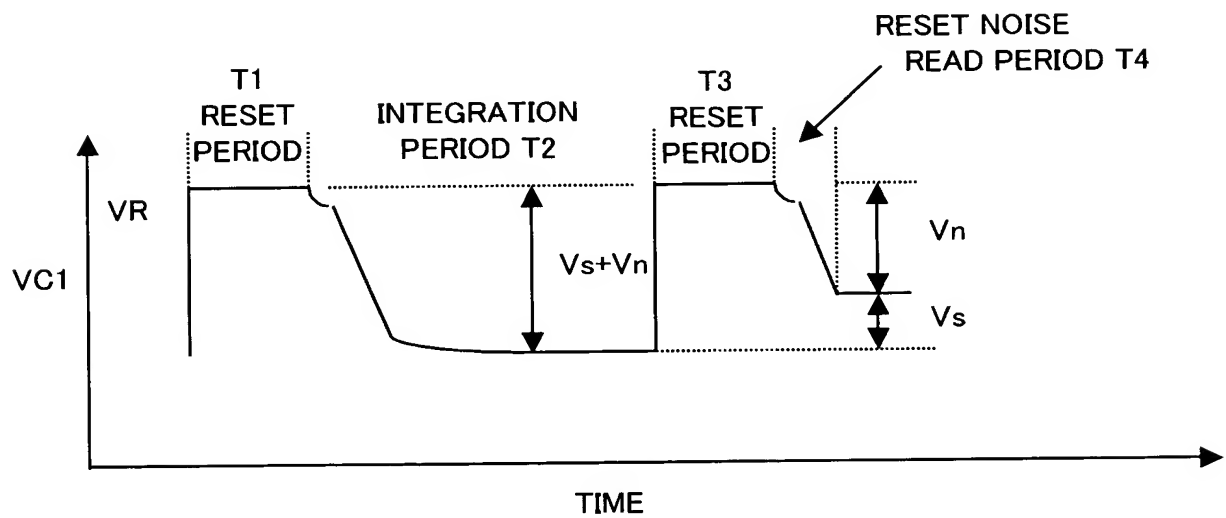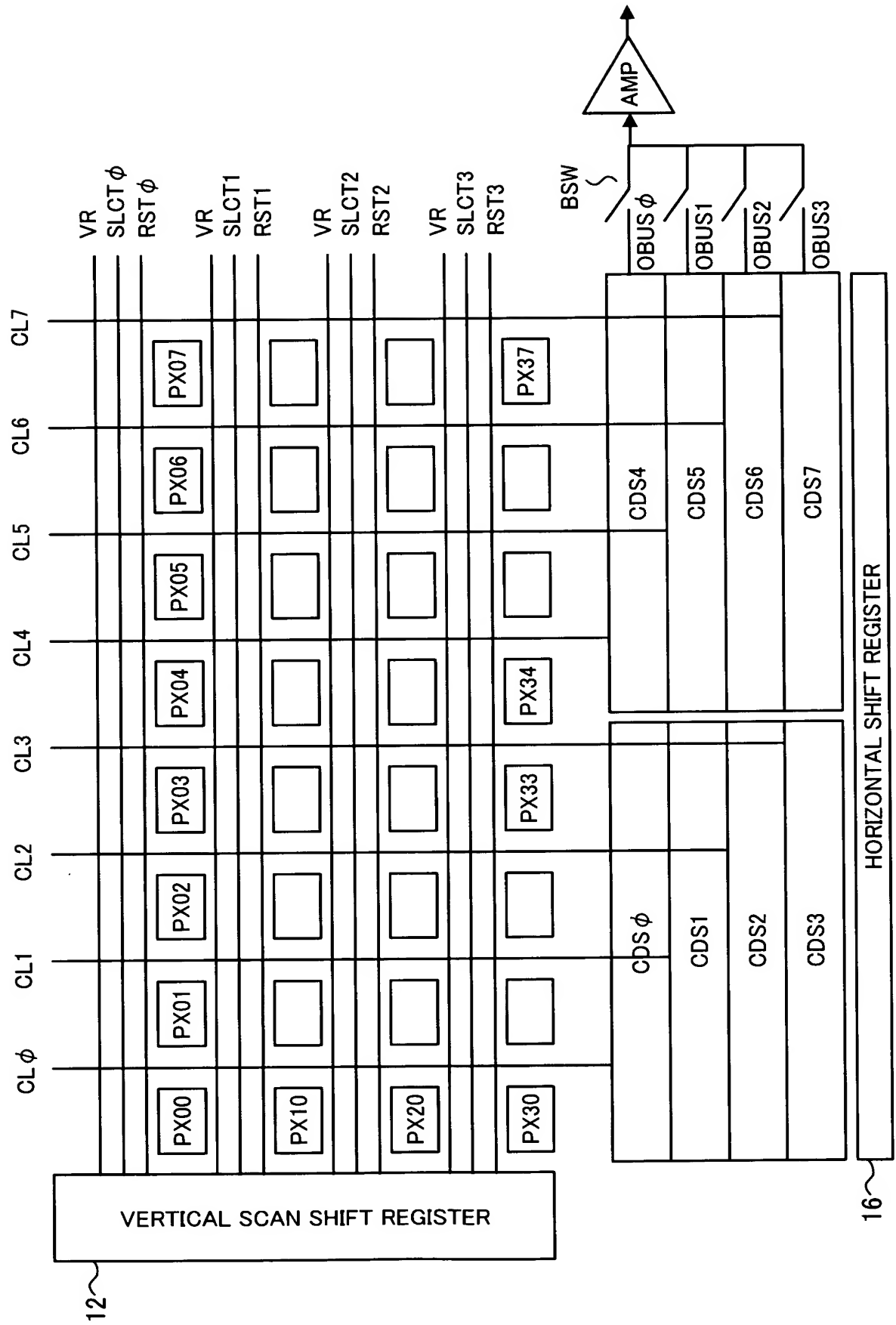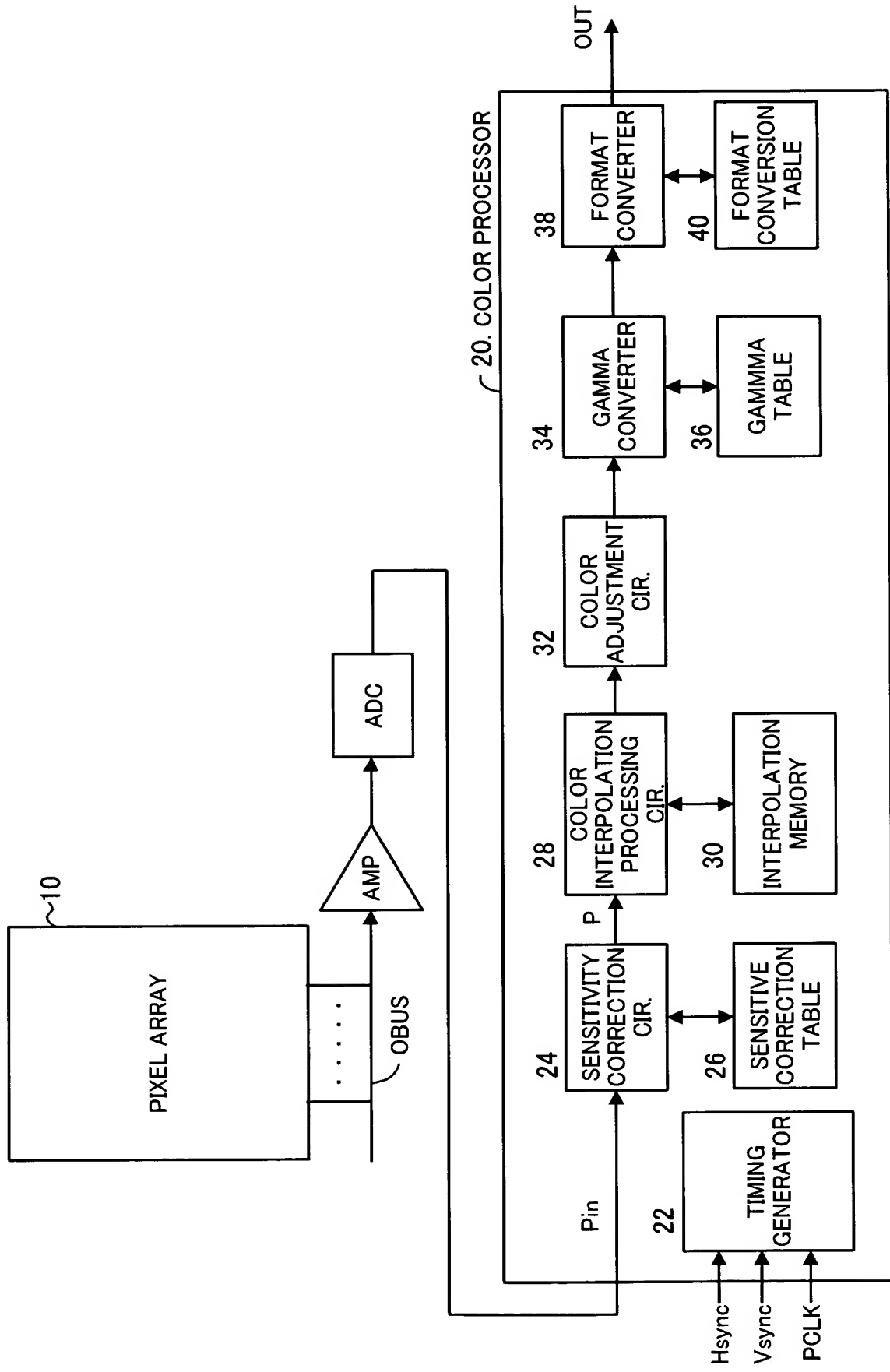40 FORMAT CONVERSION TABLE

OUT

22 TIMING GENERATOR

Hsync

Vsync

PCLK

FIG. 6

RGRGRGRGRG
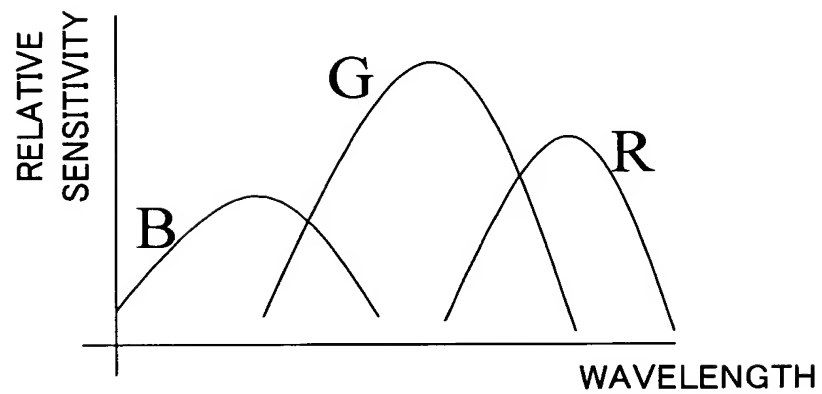GBGBGBGBGB
RGRGRGRGRG
GBGBGBGBGB
RGRGRGRGRG
GBGBGBGBGB

FIG. 7

FIG. 8A

Pin

FIG. 8B

Koff
Kgain

FIG. 8C

P=(Pin−Koff)xKgain

FIG. 9

AMP

ADC

Hsync →
Vsync → | TIMING GENERATOR |
PCLK →

22

24 SENSITIVITY CORRECTION CIRCUIT

Pin

242 | OFFSET CORRECTION CIR. |

243 | GAIN CORRECTION CIR. | → P

244 | ADD |

245 | SELECTOR |

246 | SELECTOR |

247 | SELECTOR |

261 | RO, GrO GbO,BO |

262 | C1,C2,C3,C4 |

263 | RG, GrG GbG,BG |
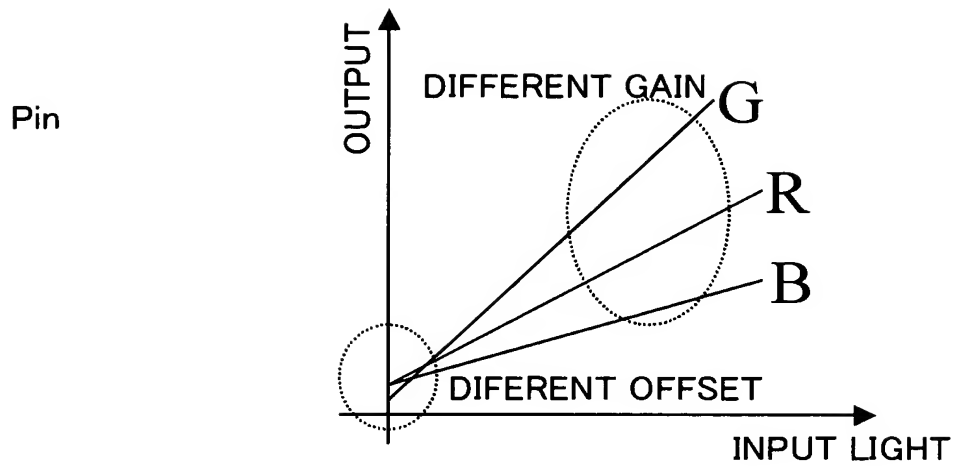
26

266 | CO, MO, YO, KO |

267 | C1,C2,C3,C4 |

268 | CG, MG, YG, KG |
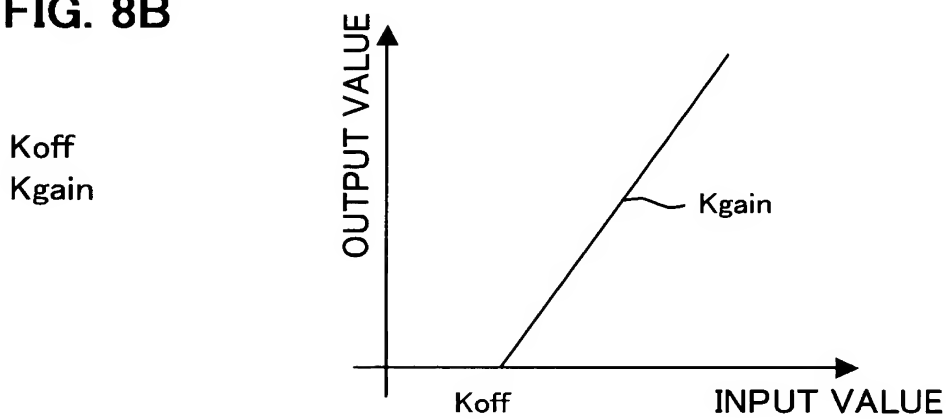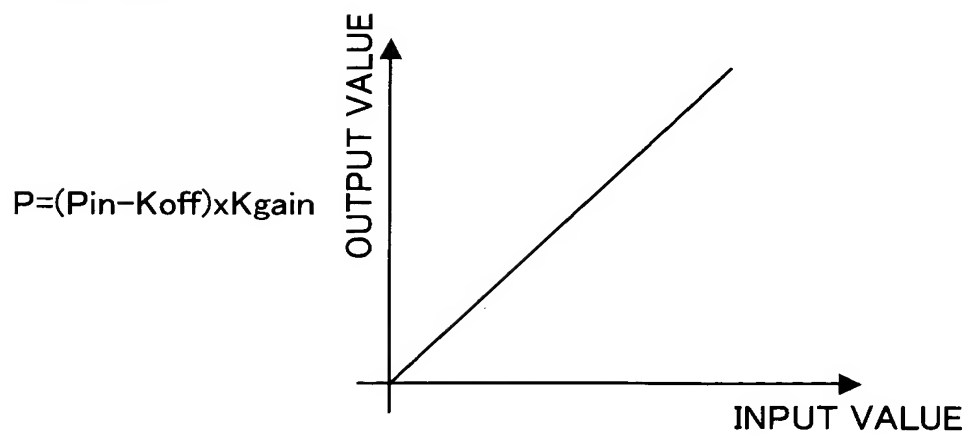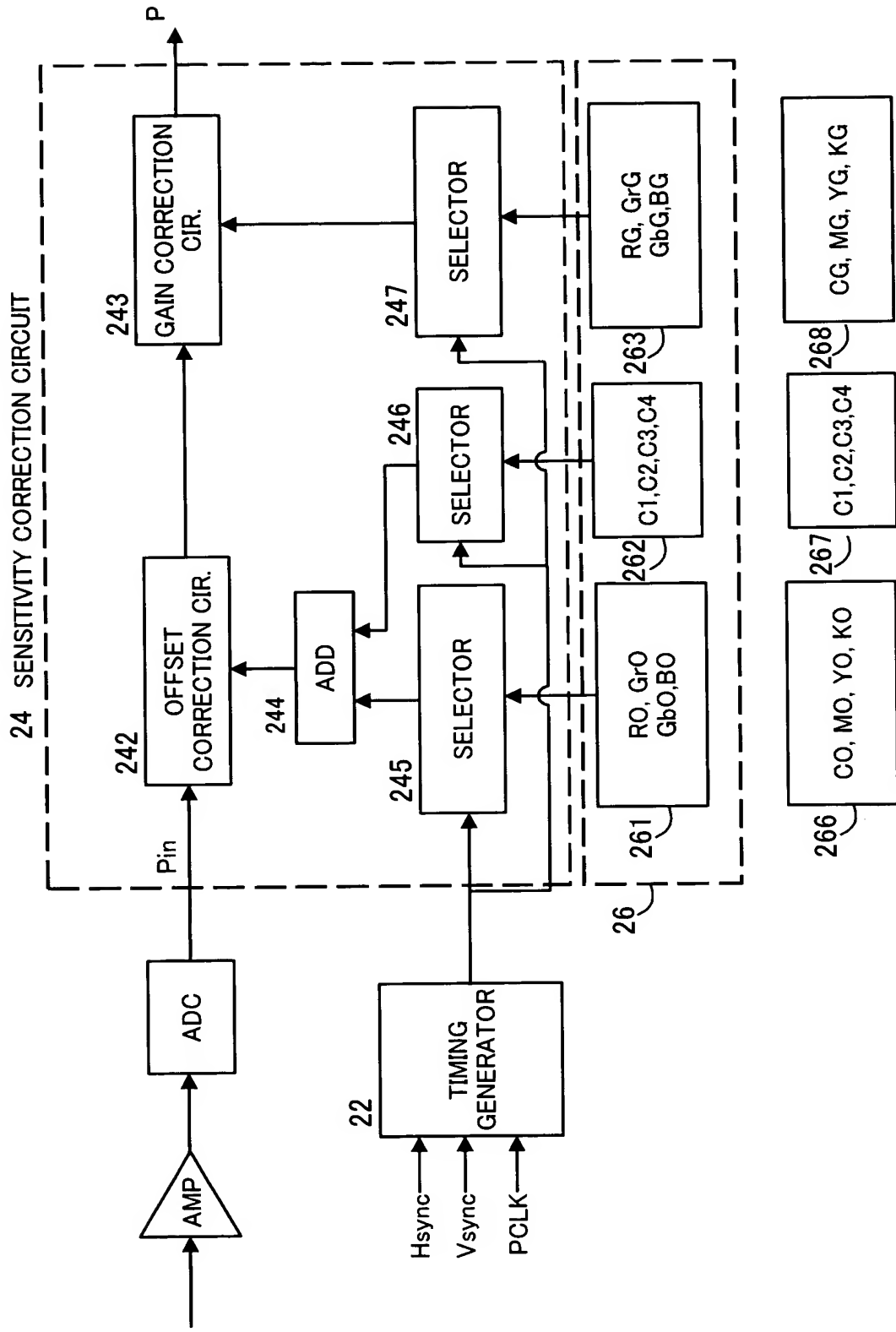
FIG. 10A

(A)   PIXEL SIGNALS PIN OUTPUT FROM PIXELS
R11=31 G12=61 R13=33 G14=59
G21=60 B22=13 G23=62 B24=11
R31=31 G32=61 R33=33 G34=59
G41=60 B42=13 G43=62 B44=11

FIG. 10B

(B) OFFSET FOR EACH COLUMN C1=0 C2=1 C3=2 C4=-1
OFFSET FOR EACH FILTER COLOR RO=1 GO=0 BO=2
GAIN FOR EACH COLOR RG=2 GG=1 BG=6

FIG. 10C

(C) FIRST LINE
column 1 R {Pin-(C1+RO) } x RG = R11m
column 2 G {Pin-(C2+GO) } x GG = G12m
column 3 R {Pin-(C3+RO) } x RG = R13m
column 4 G {Pin-(C4+GO) } x GG = G14m
SECOND LINE
column 1 G {Pin-(C1+GO) } x GG = G21m
column 2 B {Pin-(C2+BO) } x BG = B22m
column 3 G {Pin-(C3+GO) } x GG = G23m
column 4 B {Pin-(C4+BO) } x BG = B24m

FIG. 10D

(D) CORRECTED PIXEL SIGNALS P

R11m=60 G12m=60 R13m=60 G14m=60
G21m=60 B22m=60 G23m=60 B24m=60
R31m=60 G32m=60 R33m=60 G34m=60
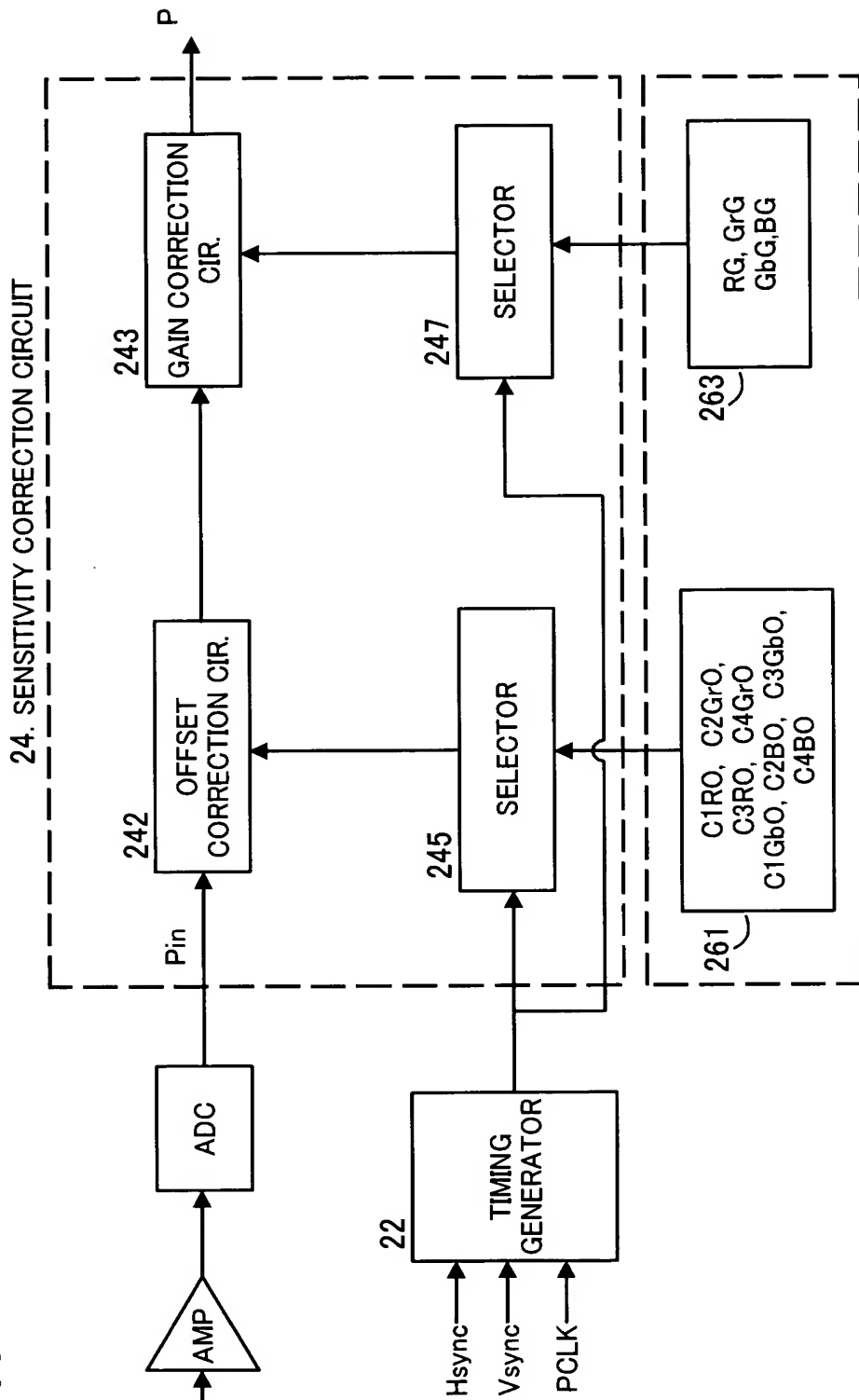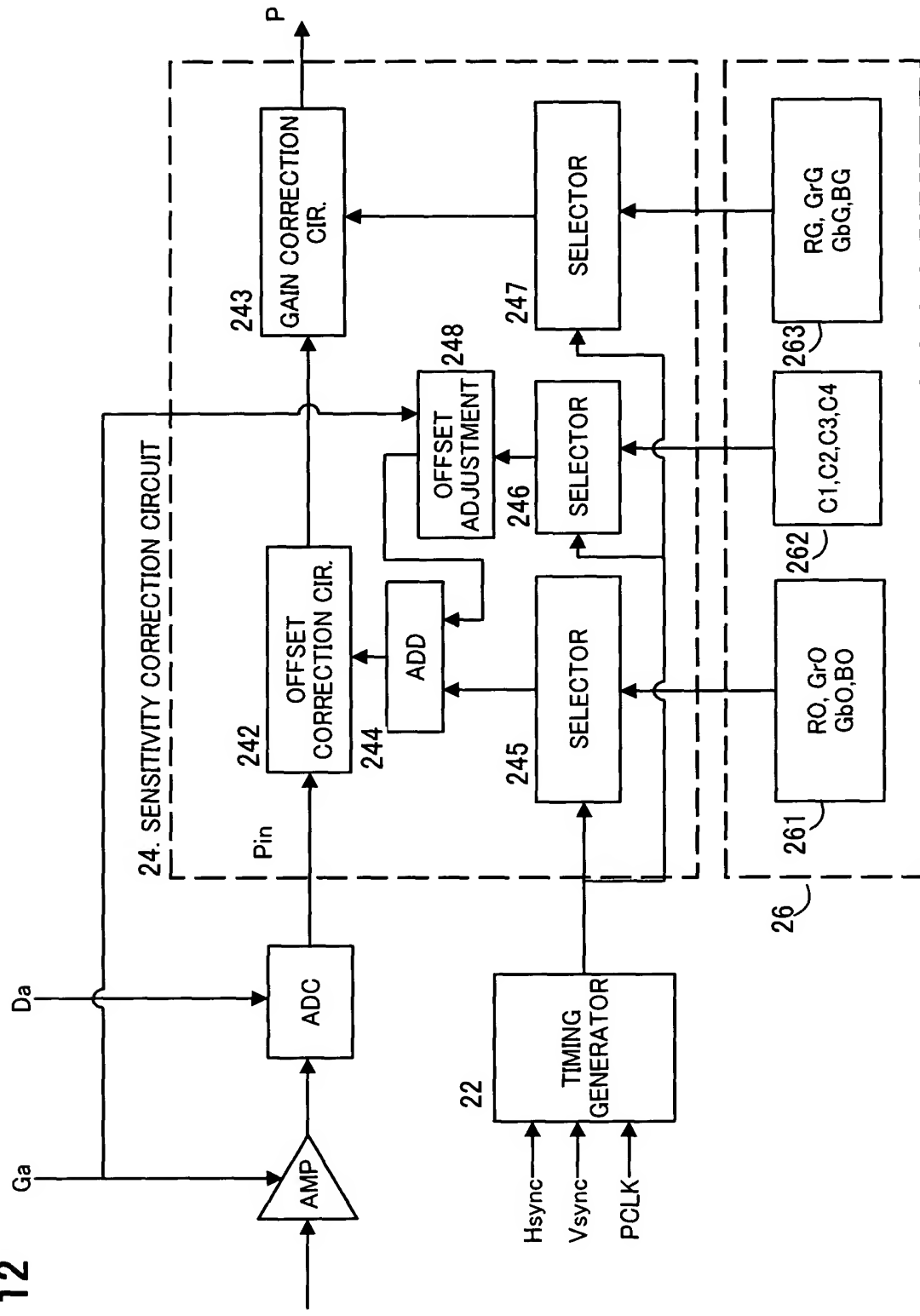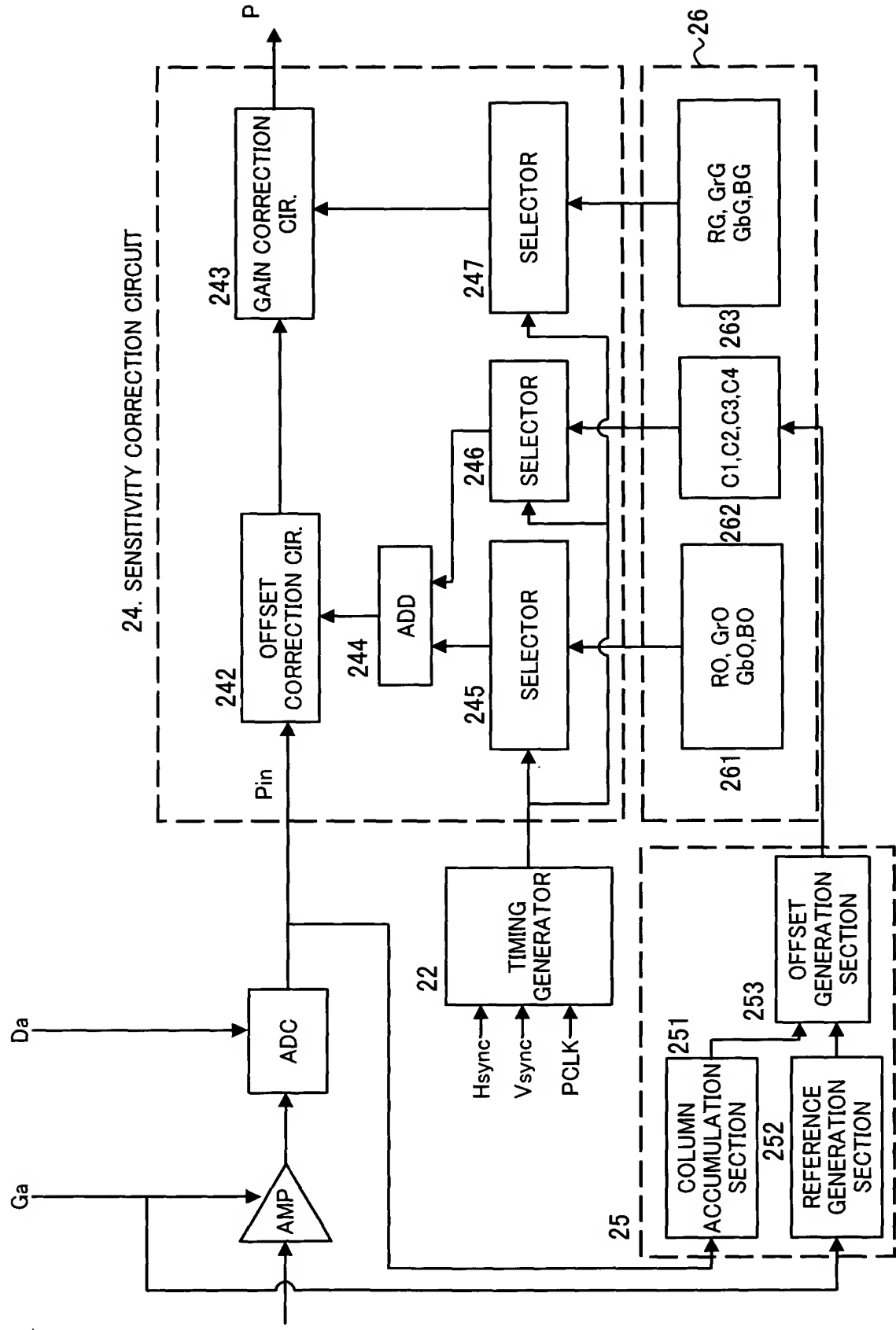G41m=60 B42m=60 G43m=60 B44m=60

FIG. 11

24. SENSITIVITY CORRECTION CIRCUIT

FIG. 12

FIG. 13

FIG. 14